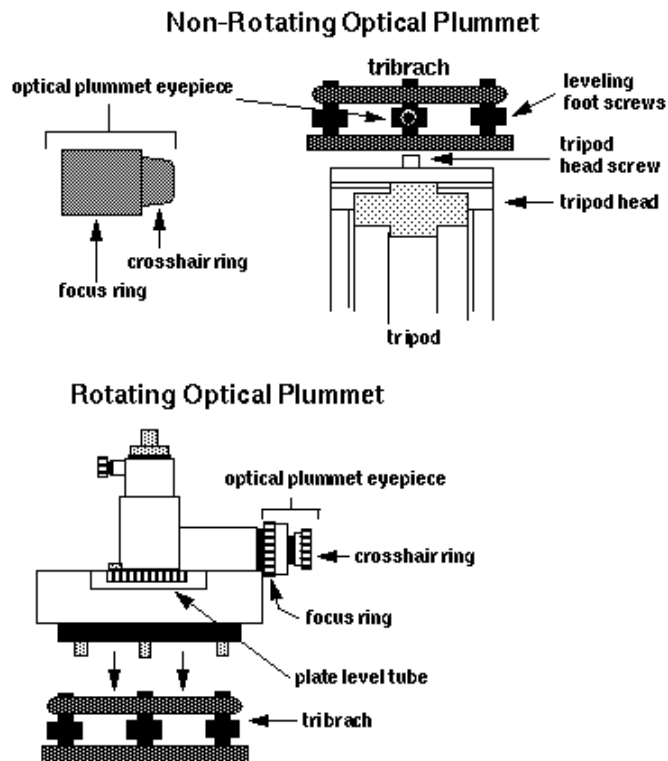


Tripod and Tribrach Setup Procedure



Steps 1-9 are for both rotating and non-rotating tribrachs:

1. Extend tripod legs so the top of the tripod head comes up to your chin. Lock legs at this height with the leg screws. If the ground is not level the legs will have to be extended at different lengths.
2. Attach tribrach to tripod head using the large center screw on the tripod head. Make sure that the leveling foot screws on the tribrach are centered half way between their range of movement.
3. Open tripod legs over the mark and step (set) one leg into the ground at about a 45o slant angle and about 3 feet from the station mark. Look through the optical plummet and position the cross hairs over the point using the remaining two tripod legs. If viewing or crosshairs are out of focus adjust the crosshairs ring first until the crosshairs appear clear and crisp. Adjust the focus ring until the image is in focus. To check for parallax slowly move your head around while looking through the optical plummet. You should see no movement between the crosshairs and the focused background (this is known as being out of parallax), nor should the crosshairs move apart.
4. Once the cross hairs are within 1 cm of the point and the head of the tripod is visually level, step the remaining two legs into the ground. At this point sand bag or tie down the tripod legs.
5. Precisely position the tribrach crosshairs over the point using the leveling foot screws on the tribrach.
6. Level the bull's-eye bubble on the tribrach by using two tripod legs. (Do not level using the tribrach foot screws.) At this point you are leveling the tripod head.
7. When the bubble is within the circle of the bull's eye use the tribrach leveling foot screws to precisely center the bubble.
8. Once the bull's-eye bubble is precisely level, look through the optical plummet to ensure that the crosshairs are over the point or at least within a few cms. Center the crosshairs precisely over the point by loosening the tripod head screw and gently slide the tribrach and adapter over the point. When centered, tighten the tripod head screw. If tribrach overhangs tripod head, return to step 2.
9. Check the level bubble. If the level is out:
 - just a little - return to step 7.
 - by a lot - (more than a couple of mms) - return to step 5.

For Tribrachs with Non-Rotating Optical Plummet:

10. Check the set up and calibration of the tribrach by attaching the plumb bob to the tripod head screw so it hangs over the point. It should hang precisely over the point +/- the plumb bob string width.

NOTE: This will not necessarily be true in windy conditions. In windy conditions the plumb bob will be blown away from the mark. If the site is located in an area with high winds the calibration of the tribrach can be checked indoors by performing the set up procedure.

For Tribrach with Rotating Optical Plummet:

10. Follow steps 1-9 above.

11. Turn the optical plummet so that the plate bubble tube is parallel to two footscrews of the tribrach. Center the bubble by adjusting these two footscrews in equal and opposite directions.

12. Turn the optical plummet through 90°. Center the bubble with the third footscrew.

13. Turn the optical plummet through 90° so that the bubble is parallel to the first 2 footscrews. Note position of bubble. If the bubble is centered between the middle divisions, then the tribrach is level in this plane. If the bubble sits more than one division off center, then note how many divisions off center it lies and by adjusting the two footscrews in equal and opposite directions bring the bubble toward the center by half the amount it was off center before. Turn the optical plummet through 180° again and check where the bubble rests. Repeat the process until the bubble is within one division of the central division.

14. Now turn the optical plummet through 90° and check the level in this plane. Note the position of the bubble. If the bubble is off center by more than one division, turn the third footscrew to bring the bubble to a point halfway between the position noted and the centered position. Rotate through 180° and check again using the third footscrew for any fine adjustment.

15. Now rotate the optical plummet through 360° and check if the bubble remains within 1 division of the center for any position.

16. Center the adapter precisely over the point by loosening the tripod head screw and gently sliding the tribrach and adapter over the point. When centered tighten the tripod head screw.

17. Check the set up and calibration of the tribrach by rotating the adapter 180° and check the plummet. If the tribrach is off center by more than 1mm then loosen the tripod head screw and gently slide the tribrach and adapter half the distance it was off. Rotate the adapter 180° and recheck the plumb. The offset should be the same. If not repeat this step again.

Attaching the GPS Antenna:

When attaching the antenna to the tribrach first screw the brass adapter plug into the antenna then gently slide the plug into the tribrach adapter or rotating optical plummet.